RECOMMENDATION ON LOCATION OF COMMON DATA CHAMBER

At present the requirement that common data (longitude, latitude, ground speed, etc.) be photographed at plus or minus a fixed time interval from the nadir of each frame has forced us to retain the common data chamber as separate from the rear end data chamber.

We recommend that this requirement be modified so that the common data chamber is photographed at the same time and place as the rear data chamber. Such a timing results in the common data photograph appearing 90/180 γ or ½ cycle after the forward unit nadir (about 3 seconds), but at the same time as nadir for the rear unit. At present common data is to be flashed at γ/4 <u>after</u> nadir on forward unit frames, and γ/4 <u>before</u> nadir on rear unit frames.

Advantages to our recommendation include:

1. Elimination of an optical system by combining the image system of "common" and "rear end" data chambers into a single projection system.
2. Increase in reliability by eliminating requirement for separate pulsing circuits, "A part that isn't there can't fail".
3. Weight and power saving by combining the two flash units now required into one. Estimated savings ½ pound weight, 10 watt power.
4. Increased ease of testing and maintenance, combining the two data chamber power supplies, projection and control mechanisms, reduces mechanisms and elements by almost 50%

It is not known by us what advantages may exist in flashing approximately 1½ seconds before nadir on one frame and 1½ seconds after nadir on neighboring frames versus flashing at nadir on one frame and three seconds after nadir on neighboring frames.

DOCUMENT 196

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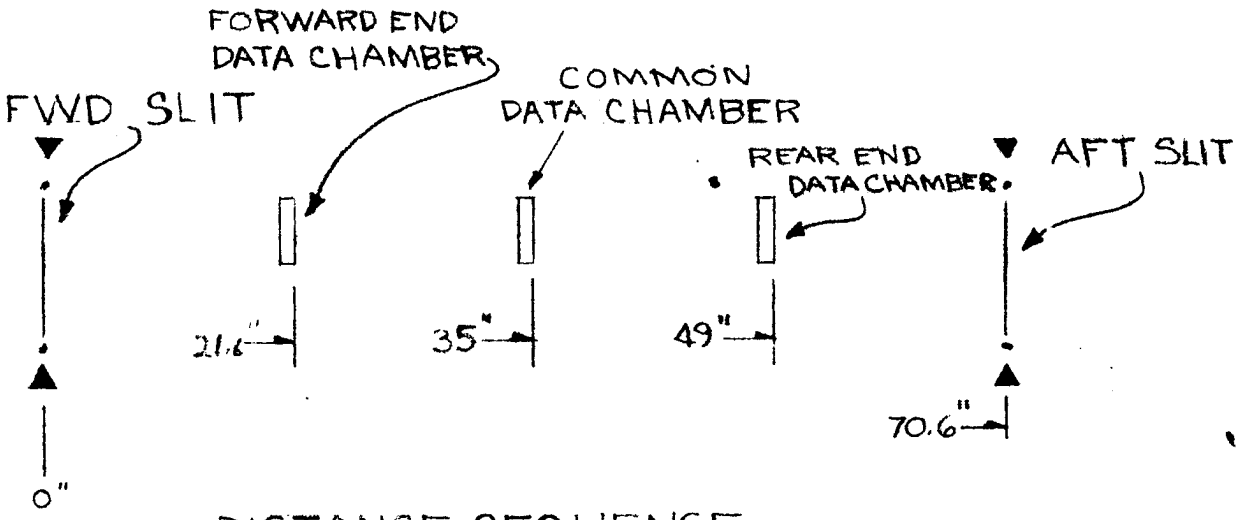
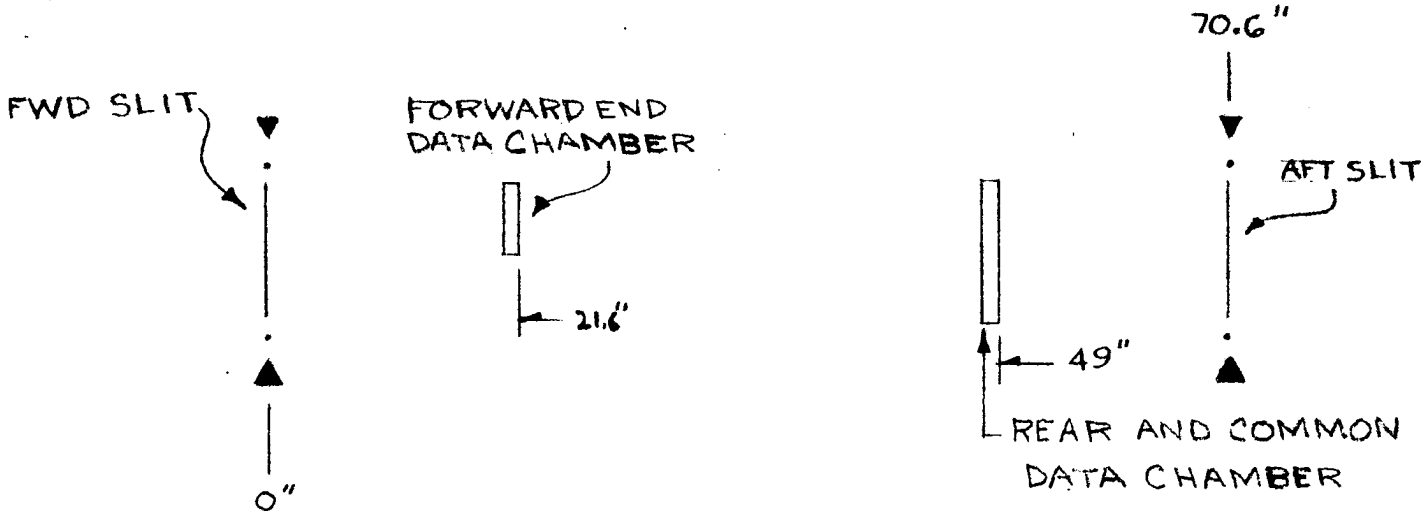
6/2/60

FIG. 1 - PRESENT DATA CHAMBER & SLIT LAYOUT



DISTANCE SEQUENCE

FIG. 2 - PROPOSED DATA CHAMBER & SLIT LAYOUT



NOTE: RESULTING FILM FORMAT SAME IN BOTH CASES, ONLY CHANGE IS REAL TIME AT WHICH COMMON DATA IS PHOTOGRAPED.

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